

IN THE CLAIMS:

Please cancel Claims 15-21, without prejudice to or disclaimer of the subject matter recited therein.

Please amend Claims 1-14, as follows. For the Examiner's convenience, all claims currently pending are reproduced below.

1. (Currently Amended) An exposure mask for exposing an image forming layer provided on a substrate, ~~by use of near field light leaking from adjoining openings formed in a light blocking member characterized in that~~ the exposure mask comprising:

~~the a~~ light blocking film has member having adjoining openings at an opening interval that is determined so that an electric field distribution at ~~the an~~ image forming layer side of the ~~opening to be~~ openings defined as exposure light is projected on the light blocking member has a correlation with an eccentric model of electric field distribution as determined by a linewidth and a height of a pattern to be produced,

wherein the image forming layer can be exposed by use of near field light leaking from the adjoining openings formed in the light blocking member.

2. (Currently Amended) An exposure mask for exposing an image forming layer provided on a substrate, ~~by use of near field light leaking from adjoining openings formed in a light blocking member, characterized in that~~ the exposure mask comprising:

a light blocking member having adjoining openings, wherein the image forming layer can be exposed by use of near field light leaking from the adjoining openings formed in the light blocking member, and

wherein a relation $K \geq (W+2T)$ is satisfied where T is the height of a pattern to be produced by use of the image forming layer, W is the linewidth of the pattern, and K is the width of the light blocking member being present between adjacent openings.

3. (Currently Amended) An exposure mask for exposing an image forming layer provided on a substrate, ~~by use of near field light leaking from adjoining openings formed in a light blocking member, characterized in that the exposure mask comprising:~~

a light blocking member having adjoining openings, wherein the image forming layer can be exposed by use of near field light leaking from the adjoining openings formed in the light blocking member, and

wherein a relation $D \leq (P-W-2T)$ is satisfied where T is the height of a pattern to be produced by use of the image forming layer, W is the linewidth of the pattern, P is the pitch of the pattern, and D is the width of the opening.

4. (Currently Amended) An exposure mask for exposing an image forming layer provided on a substrate, ~~by use of near field light leaking from adjoining openings formed in a light blocking member, characterized in that the exposure mask comprising:~~

a light blocking member having adjoining openings, wherein the image forming layer can be exposed by use of near field light leaking from the adjoining openings formed in the light blocking member, and

wherein a relation $D = \{P - W - 2T(1 + \alpha)\}$ is substantially satisfied where T is the height of a pattern to be produced by use of the image forming layer, W is the linewidth of the pattern, P is the pitch of the pattern, and D is the width of the opening while taking into account a process margin α after the exposure.

5. (Currently Amended) An exposure mask according to Claim 3 or 4, wherein the value of the pitch is made not greater than the wavelength of a surface plasmon polariton wave to be produced on the basis of the light blocking member.

6. (Currently Amended) An exposure mask according to any one of Claims 1-[[5]] 4, wherein the openings of the mask have a two-dimensional shape or they are arranged two-dimensionally, with respect to a direction along the surface of the light blocking member where the openings are formed.

7. (Currently Amended) A method of designing an exposure mask for exposing an image forming layer provided on a substrate, by use of near field light leaking from adjoining openings formed in a light blocking member, characterized in that the method comprising:

determining an opening interval of the openings in the light blocking film is determined member on the basis of a linewidth and a height of a pattern to be produced by use of the image forming layer.

8. (Currently Amended) A method of manufacturing an exposure mask for exposing an image forming layer provided on a substrate, by use of near field light leaking from adjoining openings formed in a light blocking member, characterized in that the method comprising:

determining an opening interval of the openings in the light blocking film is determined member on the basis of a linewidth and a height of a pattern to be produced by use of the image forming layer, and that, layer; and

processing the light blocking member is subsequently processed so as to obtain the thus determined opening interval.

9. (Currently Amended) An exposure method for exposing an image forming layer provided on a substrate, by use of an exposure mask having a light blocking member with an opening and on the basis of near field light leaking from the opening, characterized by the method comprising:

a step of preparing an exposure mask as recited in any one of Claims 1 - [[6]] 4;

a step of approximating the near-field exposure mask and the image forming layer to each other, up to a distance not greater than a near field region; and

an exposure step for irradiating the image forming layer with exposure light through the exposure mask.

10. (Currently Amended) An exposure method according to Claim 9, wherein, where P is the pitch of a pattern to be produced by use of the image forming layer, D is the width of the opening, W' is the linewidth, and T' is the pattern height; through adjustment of an exposure amount in the exposure step and of another condition or conditions, an exposure is carried out to satisfy a relation $(W' + 2T') \leq (P - D)$, where P is the pitch of a pattern to be produced by use of the image forming layer, D is the width of the opening, W' is the linewidth, and T' is the pattern height.

11. (Currently Amended) A pattern forming method including comprising:
an exposure step for exposing an image forming layer on the basis of near field light by use of a near-field exposure mask having a light blocking member with openings having a pitch P and an opening width D; and
a developing step for developing the exposed image forming layer, characterized in that:

wherein, through adjustment of an exposure amount in the exposure step and a developing condition in the developing step, a pattern having a linewidth W and a height T satisfying a relation $(W + 2T) \leq (P - D)$ is produced.

12. (Currently Amended) A method according to Claim 11, wherein[[,]] where a minimum value of the height T of the pattern is determined as T'' due to process after that pattern formation; a pattern having a linewidth W that satisfies a relation $W \leq (P - D - 2T'')$ is produced,

where T" is a minimum value of the height T of the pattern due to process after the pattern formation.

13. (Currently Amended) A device manufacturing method characterized by including comprising:

an exposure step for exposing a process object by use of an exposure method as recited in Claim 9, and 9;

a developing step for developing the exposed process object, wherein, after these steps; object; and

thereafter conducting a predetermined process is conducted to the process object, whereby a device is manufactured.

14. (Currently Amended) An exposure apparatus including light irradiating means and an exposure mask, for exposing a process object provided on a substrate, by use of near field light leaking from a plurality of openings formed in a light blocking member of the mask, characterized in that:

wherein as the exposure mask, said exposure apparatus comprises an exposure mask as recited in any one of Claims 1 - [[6]] 4.